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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/987,437

11/14/2001

W. Don Morison

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6763

27557

7590

03/28/2003

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EXAMINER

LYONS, MICHAEL A

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 03/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/987,437		MORISON ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Michael A. Lyons		2877	

-- Th **MAILING DATE** of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> . | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Objections*

Claim 34 is objected to because of the following informalities: the word "on" in line 1 of the claim should read "one". Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 48 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim as written is dependent upon itself.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-13, 18-23, 25-37, 42-47, and 49-53 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Sorin et al (5,557,400).**

Regarding claim 25, Sorin (Fig. 1 and 3) discloses a source of light 20, a first optical path 22 with an optical fiber whose path length that changes in response to a physical condition, a second optical path 33 with an optical fiber whose path length in a controlled manner via moving mirror 34 representing an actuator, a first coupler 21, a photodetector 36, and analyzer 329 as a computer system receiving signals from the photodetector.

Art Unit: 2877

Regarding claim 1, while Sorin fails to disclose the claimed method, the device as described above with regards to claim 25 does disclose the claimed elements of the system. Therefore, the claimed method of use is inherent in the disclosed system.

As for claims 2 and 26, the second optical fiber is contained in an autocorrelator, making the only change in path length being that generated by the controlled movement of mirror 34.

As for claims 3 and 27, Sorin discloses a short coherence length interferometer.

As for claims 4-7 and 28-31, Sorin's device uses a mirror with an actuator to expand and contract the length of the fiber.

As for claims 8 and 32, fiber 32 has a fixed length.

As for claims 9 and 33, the second optical path comprises the first fiber.

As for claims 10 and 34, coupler 21 passes the light as claimed.

As for claims 11 and 35, the device includes a second coupler 31, wherein both of the couplers pass the light through as claimed. In addition, the first fiber comprises mirrors 11, 12, 13, 14, and 15.

As for claims 12 and 36, the second and third fibers include mirrors 34 and 37, with the second coupler passing light as claimed.

As for claims 13 and 37, mirror 11 is a partial mirror.

As for claims 18-22 and 42-46, the fiber of Sorin responds to the physical condition by changing its length.

As for claims 23 and 47, fiber 22 changes length in response to a physical condition.

Regarding claim 49, Sorin (Fig. 1 and 3) discloses a source of light 20, a first optical path 22 with an optical fiber whose path length that changes in response to a physical condition, a

Art Unit: 2877

second optical path 33 with an optical fiber whose path length in a controlled manner via moving mirror 34 representing an actuator, a first coupler 21, a photodetector 36, and analyzer 329 as a computer system receiving signals from the photodetector.

As for claims 50-53, Sorin's device uses a mirror with an actuator to expand and contract the length of the fiber.

As for claim 54, Sorin discloses a short coherence length interferometer.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 14-17, 24, 38-41, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sorin et al (5,557,400).**

As for claims 14 and 38, the interference fringe maximum is well known.

As for claims 15-17 and 39-41, the location of the fiber is a matter of design choice.

Art Unit: 2877

As for claims 24 and 48, the use of a single-mode fiber is well known.

***Conclusion***


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. An apparatus for measuring the thickness of a moving film utilizing an adjustable numerical aperture lens to Sorin (5,473,432), and an associated dual interferometric measurement method for determining a physical property of an object to Marcus et al (5,596,409).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Lyons whose telephone number is 703-305-1933. The examiner can normally be reached on Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G Font can be reached on 703-308-4877. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-0725 for regular communications and 703-308-0725 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0935.

MAL  
March 20, 2003



**Samuel A. Turner**  
**Primary Examiner**